

# Quadratic Functions I Activity Objectives

Activity Title	Mathematical Objectives
Autism Awareness: Creating and Using Quadratic Models (p. 6)	Calculate and interpret the meaning of average rates of change Use rates of change to forecast unknown results Use regression to find a quadratic model
Autism Awareness: Solving Quadratic Equations (p. 10)	Evaluate a quadratic function model at a given value Solve a quadratic equation with the Quadratic Formula Find the $x$ -intercepts and vertex of a parabola from its equation
Business Growth - USAA: Quadratic Function Modeling (p. 14)	Calculate and analyze trends in rates of change Draw a scatter plot of a data set Use regression to find a quadratic model Evaluate a quadratic function
Changing Population - Kentucky: Doing Data Analysis and Modeling (p. 18)	Determine if a linear or quadratic function best fits a data set Use regression to find a quadratic model Solve a quadratic equation with the Quadratic Formula
Changing Population - New York: Modeling with Quadratics (p. 22)	Explain the relationship between rates of change and concavity Determine if a linear or quadratic function best fits a data set Use regression to find a quadratic model Find the vertex of a quadratic function algebraically
Changing Population - South Carolina: Doing Data Analysis and Modeling (p. 26)	Determine if a linear or quadratic function best fits a data set Use regression to find a quadratic model Evaluate a quadratic function at a given value Solve a quadratic equation with the Quadratic Formula
Falling Objects - Empire State Building: Working with Quadratics (p. 30)	Use a quadratic model for the position of a falling object Create a linear equation for the velocity of a falling object Use the quadratic formula to find $x$ -intercepts
Falling Objects - Sears Tower: Working with Quadratics (p. 34)	Use a quadratic model for the position of a falling object Create a linear equation for the velocity of a falling object Use the quadratic formula to find $x$ -intercepts
United States Population: Using Quadratic Models (p. 38)	Solve a quadratic equation with the Quadratic Formula Evaluate a quadratic function at a given value Estimate the point of intersection of two graphs visually
Using the Body Mass Index Formula: Solving Equations (p. 42)	Evaluate a multivariable function at a given point Solve linear and quadratic equations